Output tables for 1xN statistical comparisons.

December 17, 2022

1 Average rankings of Friedman test

Average ranks obtained by each method in the Friedman test.

Algorithm	Ranking
MEABC	6.1034
ABCADE	3.9655
ABCNG	4.7586
SHADE	3.5172
MAPSO	4.8621
TAPSO	3.2759
MEEABC	1.5172

Table 1: Average Rankings of the algorithms (Friedman)

Friedman statistic (distributed according to chi-square with 6 degrees of freedom): 78.70936.
P-value computed by Friedman Test: 0.

2 Post hoc comparison (Friedman)

P-values obtained in by applying post hoc methods over the results of Friedman procedure.

i	algorithm	$z = (R_0 - R_i)/SE$	p	Holm Hochberg Hommel	Holland	Rom
6	MEABC	8.084148	0	0.008333	0.008512	0.008764
5	MAPSO	5.895958	0	0.01	0.010206	0.010515
4	ABCNG	5.713608	0	0.0125	0.012741	0.013109
3	ABCADE	4.315598	0.000016	0.016667	0.016952	0.016667
2	SHADE	3.525418	0.000423	0.025	0.025321	0.025
1	TAPSO	3.099936	0.001936	0.05	0.05	0.05

Table 2: Post Hoc comparison Table for $\alpha = 0.05$ (FRIEDMAN)

Bonferroni-Dunn's procedure rejects those hypotheses that have an unadjusted p-value ≤ 0.008333.
Hochberg's procedure rejects those hypotheses that have an unadjusted p-value ≤ 0.05.
Hommel's procedure rejects all hypotheses.
Rom's procedure rejects those hypotheses that have an unadjusted p-value ≤ 0.05.

3 Adjusted P-Values (Friedman)

Adjusted P-values obtained through the application of the post hoc methods (Friedman).

i	algorithm	unadjusted p	p_{Bonf}	p_{Holm}	$p_{Hochberg}$	p_{Hommel}
1	MEABC	0	0	0	0	0
2	MAPSO	0	0	0	0	0
3	ABCNG	0	0	0	0	0
4	ABCADE	0.000016	0.000096	0.000048	0.000048	0.000048
5	SHADE	0.000423	0.002537	0.000846	0.000846	0.000846
6	TAPSO	0.001936	0.011614	0.001936	0.001936	0.001936

Table 3: Adjusted p-values (FRIEDMAN) (I)

i	algorithm	unadjusted p	$p_{Holland}$	p_{Rom}
1	MEABC	0	0	0
2	MAPSO	0	0	0
3	ABCNG	0	0	0
4	ABCADE	0.000016	0.000048	0.000048
5	SHADE	0.000423	0.000845	0.000846
6	TAPSO	0.001936	0.001936	0.001936

Table 4: Adjusted p-values (FRIEDMAN) (II)